

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN OR RELATING TO TABLET DISPENSERS

(71) We, COOPER, McDougall AND ROBERTSON LIMITED, of Cooper House, Berkhamstead, Hertford, a company incorporated in England do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to a device suitable for administering tablets, pills or strong-walled gelatin capsules, hereinafter all referred to by the term "pills", to animals, especially domestic animals such as sheep or cattle.

15 When treating ailments, it is highly desirable that a dispensing device be used which dispenses the pill directly into the animal's throat rather than into its mouth. This greatly reduces the possibility that the animal will reject the pill.

20 Heretofore there have been used dispensing devices of the kind comprising a barrel having at one end a rubber nozzle in which one or two pills can be accommodated. Such devices are provided with a plunger extending through the interior of the barrel, which plunger can be pushed into the nozzle causing the pills located therein to be expelled therefrom.

30 A disadvantage of this kind of dispensing device is that it is not possible, or at best only possible with great difficulty to accommodate more than two differently sized pills within its nozzle.

35 We have now discovered that if the interior wall of the nozzle is provided with three or more resilient webs extending away from the interior wall, more than two differently sized pills can be accommodated, either simultaneously or on different occasions, within the nozzle. This advantage of the device according to the invention is particularly useful where the dose to be administered to an animal is in the form of

a plurality of differently sized pills, or a plurality of pills of the same size.

Thus, according to the present invention, there is provided a pill dispensing device suitable for dispensing one or more pills comprising a cylindrical nozzle capable of accommodating pills therein, wherein said cylindrical nozzle has three or more resilient webs which extend along the interior surface thereof substantially parallel to its axis which webs project into the bore of the nozzle at an angle to the line joining the point of attachment of the respective web to the axis of the nozzle, the webs being so located about the interior surface as to be capable of holding one or more pills at a position from which they can be dispensed from the device, and suitable means for expelling the pill or pills therefrom.

The expression "which webs project into the bore of the nozzle at an angle to the line joining the point of attachment of the respective webs to the axis of the nozzle" is intended to convey the fact that the webs do not extend directly towards the axis of the cylindrical nozzle.

In a further aspect of the invention, there is provided a device suitable for dispensing one or more pills comprising a cylindrical nozzle for accommodating pills which is connected to a barrel wherein lies a push rod which can be activated to expel the pills from the cylindrical nozzle, the cylindrical nozzle having therein three or more resilient webs which extend along the interior surface thereof substantially parallel to its axis and which project into the bore thereof at an angle to the line joining the point of attachment of the respective webs to the axis of the nozzle, said webs being so positioned about the interior surface of the cylindrical nozzle as to be capable of holding one or more pills in position ready for expulsion by activation of the push rod.

The nozzle is preferably formed in the

shape of a hollow cylinder in which the resilient webs project into the interior space of the cylinder at an angle between the radius and the tangent at the point of attachment of the web to the interior surface.

Preferably, the external surface of the cylindrical nozzle of the device is rounded so as to prevent damage to the delicate tissues in the interior of the throat of the animal being treated. In addition, the cylindrical nozzle may be tapered to allow easier insertion into the throat of the animal.

The barrel may be of annular cross-section but preferably has a hollow square cross-section, especially when made from a plastics material.

The dispensing device of the invention will normally be operated manually and to aid such operation the exterior of the hollow barrel can be provided with finger grips.

The push rod may be of any suitable construction and may be shaped so that it can be easily pushed by hand through the barrel into the nozzle of the device. It can be of any convenient shape but, if the barrel is a hollow square cross-section, it is preferably of square cross-section. After the push rod has been activated to expel pills from the nozzle it is withdrawn therefrom so that further pills can be loaded into the device.

A stop may be provided at the end of the push rod remote from the cylindrical nozzle which stop can engage with the end of the barrel at the position of furthest travel towards the cylindrical nozzle so preventing the push rod projecting out of device and possibly causing harm to the animal being treated. This stop may be formed, for example, as a thumb pad, to allow easy withdrawal of the push rod from the nozzle after the pills have been expelled. The same object may be achieved by providing the push rod with spring means to return the push rod to its original position.

A further stop may be provided on the push rod to prevent the push rod being pulled or falling out of the barrel. Such a stop may be in the form of a collar integral with the push rod and having an angular outer surface which allows it to be snapped past a similarly shaped collar on the inside of the barrel during assembly. The collars will engage each other when the push rod is withdrawn and thus limit the movement of the push rod away from the cylindrical nozzle.

In the cylindrical nozzle the resilient webs extend longitudinally along the inside wall of the cylinder. Such longitudinally extending webs are preferably thin, as compared with the tube wall thickness, and optionally, the cross-section of the webs shows a taper towards the end not attached to the interior surface.

A convenient number of webs is four, placed, for example, equidistantly around the interior surface of the cylindrical nozzle. When a pill is placed between the webs the webs are flexed towards the interior surface and, because of their resilience, hold the pill firmly within the interior of the nozzle. The free ends of the webs do not abut the interior wall of the tubular nozzle.

The dispensing device can be made from wood or metal but is preferably formed from a plastics material, especially a thermoplastics material, such as polypropylene.

To further illustrate the invention, and to show how the same may be carried into effect, reference will now be made to the accompanying drawings in which;

Figure 1 is a perspective view of the nozzle and a part of the barrel showing one form of the webs according to the invention.

Figure 2 is a perspective view of a push rod according to the invention;

Figure 3 is a perspective view of the whole of one embodiment of the invention; 90 and

Figure 4 is a sectional view of part of the barrel and push rod of one embodiment of the invention.

Referring now to Figure 3, the dispensing device depicted is a tablet doser for sheep, which comprises a barrel 3, integral with a cylindrical nozzle 4, within which are housed longitudinally extending resilient webs 5. A stop 2 in the form of a thumb-pad is attached to one end of a push rod 6 (see Figure 2) the other end of which can be seen protruding between the webs 5 (see Figure 3). The push rod 6 extends through the barrel 3 and into the cylindrical nozzle 4. When the push rod 6 is pushed into the barrel 3 towards the cylindrical nozzle 4 at its maximum position of travel it will rest between the longitudinally extending webs 5 so that any pill located therebetween will be expelled from the dispensing device. The stop 2 limits the maximum displacement of the push rod 6. The whole device is made from a plastics material such as polypropylene.

Figure 4 depicts a stop 7 in the form of a collar integral with the push rod 6. The barrel 3 is formed with an interior collar 8 which limits the travel of the stop 7 and thus prevents inadvertent removal of the push rod 6 from the dispensing device.

Referring now to Figure 1, this drawing depicts one form of resilient web 5 (a) which may be used according to the invention. In this embodiment the webs 5 (a) extend from the interior surface of the nozzle at an angle to the radius, to a position inside the tube.

In operation, up to six pills are placed in

the cylindrical nozzle 4 between the resilient webs 5 (a) with the push rod 6 withdrawn from the tubular nozzle 4. Deformation of the webs 5 (a) allows differing sizes of pills to be accommodated within the cylindrical nozzle 4 but the resilience of these webs 5 (a) ensures that the pills are held fast. Once loaded with the appropriate number of pills the cylindrical nozzle 4 together with part of the barrel 3 of the dispensing device is inserted into the throat of the animal being treated. Movement of the push rod 6 into the cylindrical nozzle 4 then causes the pills housed within the cylindrical nozzle 4 to be expelled into the animal's throat.

The above device is light, cheap and easy to use.

20 WHAT WE CLAIM IS:—

1. A pill dispensing device suitable for dispensing one or more pills, comprising a cylindrical nozzle capable of accommodating pills therein, wherein said cylindrical nozzle has three or more resilient webs extending along the interior surface thereof substantially parallel to its axis which webs project into the bore of the nozzle at an angle to the line joining the point of attachment of the respective web to the axis of the nozzle, the webs being so located about the interior surface as to be capable of holding one or more pills at a position or positions from which they can be dispensed from the device, and suitable means for expelling the pill or pills therefrom.

2. A device according to claim 1 wherein said cylindrical nozzle is positioned at one end of a barrel and the expulsion means comprises a push rod housed within the

barrel which can be displaced to expel pills from the nozzle.

3. A device according to claim 1 or 2 in which the webs extend longitudinally along the cylindrical nozzle.

4. A device according to any one of claims 1 to 3 wherein the longitudinally extending webs are thin as compared with the thickness of the wall of the nozzle.

5. A device according to any one of claims 1 to 4 wherein there are four webs spaced about the interior of the cylindrical nozzle.

6. A device according to any one of claims 1 to 5 wherein the webs are spaced symmetrically about the interior of the cylindrical nozzle.

7. A device according to any one of the claims 1 to 6 wherein the external surface of the cylindrical nozzle is rounded so as to prevent damage to an animal to be treated.

8. A device according to any one of claims 1 to 7 made from a plastics material.

9. A device according to any one of claims 2 to 5 wherein the barrel is provided with finger grips to facilitate normal operation of the device.

10. A device according to any one of claims 2 to 9 in which the push rod is provided with a stop at the end of the rod furthest away from the cylindrical nozzle so as to prevent excessive travel of the push rod into the or an animal being treated.

11. A device according to claim 1 substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

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COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of
the Original on a reduced scale

FIG. 1

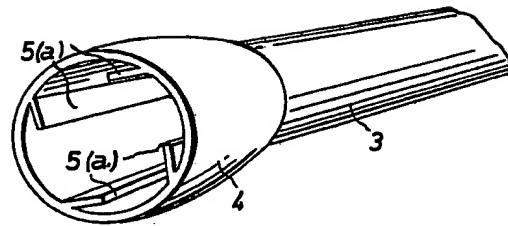


FIG. 2

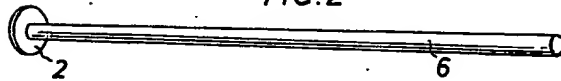


FIG. 3

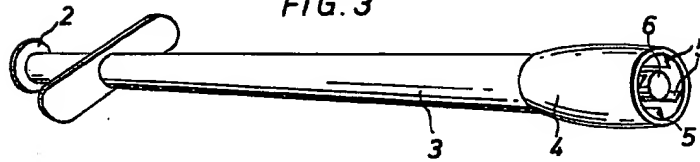


FIG. 4

